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TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
112857-072

In Re Application Of: **Kobayashi et al.**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/689,092	October 12, 2000	N. Pillai	29175	2173	8331

Invention: **METHOD AND APPARATUS FOR DISPLAYING CONTENT IN AN ARRAY HIERARCHICAL STRUCTURE**

COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on May 24, 2004

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Kobayashi et al.
Appl. No.: 09/689,092
Conf. No.: 8331
Filed: October 12, 2000
Title: METHOD AND APPARATUS FOR DISPLAYING CONTENT IN AN
ARRAY HIERARCHICAL STRUCTURE
Art Unit: 2173
Examiner: N. Pillai
Docket No.: 112857-072

Commissioner for Patents
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APPELLANTS' APPEAL BRIEF

Sir:

Appellants submits this Appeal Brief in support of the Notice of Appeal filed on May 24, 2004 and received by the U.S. Patent and Trademark Office on May 27, 2004. This Appeal is taken from the Final Rejection dated February 24, 2004.

I. REAL PARTY IN INTEREST

The real party in interest for the above-identified patent application on appeal is Sony Corporation by virtue of an Assignment dated October 12, 2000 and recorded at the United States Patent and Trademark Office at reel 011309, frame 0658.

II. RELATED APPEALS AND INTERFERENCES

Appellants does not believe there are any known appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision with respect to the above-identified Appeal.

III. STATUS OF CLAIMS

Claims 1-10 are pending in the above-referenced patent application. A copy of the appealed claims is attached in the Appendix. In the Final Office Action dated February 24, 2004, claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S.

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Patent No. 5,623,613 to Rowe et al. ("Rowe") and Excel 5.0 For Windows ("Excel 5.0"). Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Rowe in view of Excel 5.0 and in further view of Designing the User Interface by Ben Shneiderman.

IV. STATUS OF AMENDMENTS

A Response to the Final Office Action was filed on April 7, 2004. The Response was entered but was deemed to not place the application in condition for allowance.

V. SUMMARY OF INVENTION

The Summary of the Invention is provided as follows:

The present invention relates to an information processing apparatus, an information processing method and a recording medium for storing a program which enables users to search for information regarding a desired content or subject matter easily and efficiently without requiring the user to be familiar with the operations of the program. (Specification, page 1, lines 6-15.)

Systems such as an electronic music distribution (EMD) system or a video on demand (VOD) system enable users to search for desired information among several items of information arranged in alphabetical order or in chronological order of creation to receive the desired information. (Specification, page 1, lines 15-20). These systems usually display the information or content as icons and generally require the users to enter or type in text to perform a search for the desired information. In systems having such icons, the number of icons that are displayable at one time is limited by the size of the display area. Additionally, the user must remember the information or content represented by each of the icons. Accordingly, the user must be familiar with the operation of the program employed to search and obtain the desired information using the program. The user must therefore learn the complex operations of the program and remember what each icon represents in order to efficiently search for information using the program.

The present invention solves these problems by providing an information processing apparatus which displays a plurality of icons in hierarchical layers on a display so that a user can easily and efficiently search for and find desired information represented by the icons. In one embodiment, an information processing apparatus is provided which includes a first display

control device for controlling a display of an icon hierarchy including a plurality of first icons in a first hierarchical layer, a plurality of second icons in a second hierarchical layer at a level lower than the first hierarchical layer, a plurality of third icons in a third hierarchical layer at a level lower than the second hierarchical layer and a plurality of fourth icons in a fourth hierarchical layer at a level higher than the first hierarchical layer.

The present invention therefore exhibits an array of the first icons as a column or row on a screen and an array of second icons as another column or row on the screen. The number of the first icons displayed on the screen and the number of second icons displayed on the screen are determined by the size of the display area on the screen. Accordingly, the array of first icons and the array of second icons are displayed on the screen to form a hierarchical structure. An icon specifying device such as a cursor, specifies a desired icon from among the first and second icons displayed in the array hierarchical structure. A second control device is provided for changing the array hierarchical structure displayed on the screen. The second control device may be used to display the third icons in place of the second icons in the hierarchical structure on the screen and display the second icons in place of the first icons when the icon specifying device specifies one of the second icons in the hierarchical structure. Similarly, the second display device may be used to display the fourth icons in place of the third icons in the hierarchical structure on the screen, the third icons in place of the second icons and the second icons in place of the first icons when the icon specifying device specifies one of the third icons in the hierarchical structure. (Specification, page 2, line 20 to page 4 line 12.)

The present invention solves the problems associated with the conventional search programs and displays described above. In various embodiments, the present invention provides an apparatus, method and recording medium including a first display control device for controlling a display of a icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second hierarchical layer (which is at a level lower than the first hierarchical layer), a plurality for third icons on the third hierarchical layer (which is at a level lower than the second hierarchical layer) and a plurality of fourth icons on a fourth hierarchical layer (which is at a level higher than the first hierarchical layer). The different hierarchical layers exhibit an array of icons where the first icons are displayed as a column or row on a screen and the second icons as another column or row on the screen. The number of the first icons displayed on the screen and the number of the second icons displayed on the screen

are determined by the size of the display area on the screen. As described above, the first and second icons are arranged on the screen to form an array hierarchical structure. The information processing method includes an icon specifying means such as a cursor for specifying a desired icon from the first and second icons displayed on the screen.

Additionally, the present invention includes a second display control device for changing the hierarchical structure displayed on the screen. This includes displaying the third icons to replace the second icons in the hierarchical structure on the screen and displaying the second icons to replace the first icons in the hierarchical structure on the screen when the icon specifying means or cursor specifies one of the second icons.

Moreover, the present invention includes displaying the fourth icons to replace the third icons in the hierarchical structure on the screen, displaying third icons to replace the second icons in the hierarchical structure on the screen and displaying the second icons to replace to the first icons in the hierarchical structure on the screen when the icon specifying device or cursor specifies one of the third icons in the hierarchical structure. Thus, the claimed invention moves and displays the different hierarchical layers to a user as the user indicates different icons associated with the hierarchical layers.

Accordingly, the present invention enables a user to more easily and efficiently search for information on an electronic music distribution system, a video on demand system, or similar systems for desired content or desired information without requiring the user to know the complexities of the particular program or system containing the content or information (See the Specification, page 1, lines 1 through 17).

VI. ISSUE

Are the information processing apparatus, information processing method and recording medium as defined by claims 1-10 non-obvious under 35 U.S.C. § 103 over the combination of *Rowe* and *Excel 5.0*?

VII. GROUPING OF CLAIMS

Claims 1-10 stand or fall together.

VIII. ARGUMENT

A. The Claimed Invention -- Independent Claims 1, 9 and 10

On Appeal, claims 1, 9 and 10 are the sole independent claims.

Claim 1 is directed to an information processing method including a first display control means for controlling a display of an icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second higher hierarchical layer (which is at a level lower than the first hierarchical layer), a plurality of third icons on a third hierarchical layer (which is at a level lower than the second hierarchical layer) and a plurality of fourth icons on a fourth hierarchical layer (which is at a level lower higher than the first hierarchical layer). The hierarchical layers exhibit an array of the first icons as a column or a row on a screen and an array of the second icons as another column or another row on the screen. The number of the first icons displayed on the screen and the number of the second icons displayed on the screen are determined by the size of the display area on the screen. The array of the first icons and the array of the second icons displayed on the screen form an array hierarchical structure. An icon specifying means specifies the desired icon from the first or second icons displayed on the hierarchical structure. A second display control means for changing the hierarchical structure displayed on the screen displays the third icons to replace the second icons in the array hierarchical structure on the screen and displays the second icons to replace the first icons in the array hierarchical structure on the screen when the icons specify the means specifies one of the second icons in the array hierarchical structure. Additionally, the second display control means displays the fourth icons to replace the third icons in the array hierarchical structure on the screen, displays the third icons to replace the second icons in the array hierarchical structure on the screen and displays the second icons to replace the first icons in the array hierarchical structure on the screen when the icons specifying means specifies one of the third icons in the array hierarchical structure.

Claim 9 is directed to an information processing method that includes a first display step of controlling a display of an icon hierarchy including a plurality first icons in a first hierarchical layer, a plurality of second icons on a second hierarchical layer at a level lower than the first hierarchical layer, a plurality of third icons on a third hierarchical layer at a level lower than the second hierarchical layer and a plurality of fourth icons on a fourth hierarchical layer at a level higher than the first hierarchical layer. The hierarchical layers exhibit an array of the first icons

as a column or a row on the screen in an array of the second icons as another column or row on the screen. Specifically, the number of first icons displayed on the screen and the number of second icons displayed on the screen are determined by the size of the display area on the screen. The array of the first icons and the second icons are displayed on the screen to form an array hierarchical structure. An icon specifying step includes specifying a desired icon from the first and second icons displayed on the hierarchical structure. Next the method includes a second display control step of changing the array hierarchical structure displayed on the screen so as to display the third icons to replace the second icons on the array hierarchical structure on the screen and display the second icons to replace the first icons in the array hierarchical structure on the screen when the icon specifying step specifies one of the second icons in the array hierarchical structure. The second display control step also displays the fourth icons to replace the third icons in the array hierarchical structure on the screen, displays the third icons to replace the second icons in the array hierarchical structure on the screen and displays the second icons to replace the first icons in the array hierarchical structure on the screen when the icons specifying step specifies one of the third icons in the array hierarchical structure.

Claim 10 is directed to a recording medium for storing a program to be executed by a computer to implement an information processing method. The information processing method stored on the recording medium includes the steps of a first display control step of controlling a display of an icon hierarchy including a plurality of first icons on a first hierarchical layer, the plurality of second icons on a second hierarchical layer at a level lower than the first hierarchical layer, a plurality of third icons on a third hierarchical layer at a level lower than the second hierarchical layer in a plurality of fourth icons on a fourth hierarchical layer at a level higher than the first hierarchical layer. The hierarchical layers exhibit an array of the first icons as a column or a row on the screen and an array of second icons as another column or row on the screen. The number of the first icons displayed on the screen and the number of the second icons displayed on the screen are determined by the size of the display area on the screen. Additionally, the array of the first icons and the second icons are displayed on the screen to form an array hierarchical structure. The method stored on the recording medium includes an icon specifying step of specifying a desired icon from the first and second icons displayed on the hierarchical structure. The method also includes a second display control step of changing the array hierarchical structure displayed on the screen to display the third icons to replace the second icons on the

array hierarchical structure on the screen and display the second icons to replace the first icons in the array hierarchical structure on the screen when the icon specifying step specifies one of the second icons in the array hierarchical structure. The second display control step also displays the fourth icons that replace the third icons in the array hierarchical structure on the screen, displays the third icons to replace the second icons in the array hierarchical structure on the screen and displays the second icons to replace the first icons in the array hierarchical structure on the screen when the icon specifying step specifies one of the third icons in the array hierarchical structure.

B. The Rejection

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rowe in view of Excel 5.0.

C. The Patent Office Has Failed to Establish a *Prima Facie* Case of Obviousness

Appellants respectfully submit that the rejection of Claims 1-10 under 35 U.S.C. §103(a) should be reversed based on the fact that the Patent Office has failed to establish a *prima facie* case of obviousness. Specifically, the Patent Office has failed to establish that the combination of the cited references teaches or suggests the claimed invention as required by Claims 1-10.

1. The Applicable Law

Whether a claim is obvious is a question of law that is based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *In re Zurko*, 59 U.S.P.Q.2d 1693, 1696 (Fed. Cir. 2001).

The Patent Office has the initial burden of proving a *prima facie* case of obviousness. *In re Rijckaert*, 28 U.S.P.Q. 2d 1955, 1956 (Fed. Cir. 1993). In making this determination, the question is not whether the differences between the prior art and the claims themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 218 U.S.P.Q. 871 (Fed. Cir. 1983)(emphasis added). Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so

found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

The Federal Circuit has held, however, that “obvious to try” is not the standard under 35 U.S.C. §103. *Ex parte Goldgaber*, 41 U.S.P.Q. 2d 1172, 1177 (Fed. Cir. 1996). “An obvious-to-try situation exists when a general disclosure may pique the scientist curiosity, such that further investigation might be done as a result of the disclosure, but the disclosure itself does not contain a sufficient teaching of how to obtain the desired result, or that the claim result would be obtained if certain directions were pursued.” *In re Eli Lilly and Co.*, 14 U.S.P.Q. 2d 1741, 1743 (Fed. Cir. 1990). Also, one cannot use “hindsight reconstruction to pick and choose among isolated disclosures in the prior art” to re-create the claimed invention. *In re Fine*, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988). Thus, the mere fact that the prior art can be combined to achieve Appellants’s claimed invention is not enough to demonstrate obviousness. *In re Laskowski*, 10 U.S.P.Q. 2d 1397 (Fed. Cir. 1989). Rather, the prior art, in its entirety, must provide the teaching to make the combination obvious. *In re Gorman*, 18 U.S.P.Q. 2d 1885 (Fed. Cir. 1991).

Of course, “a prior art reference is relevant for all that it teaches to those of ordinary skill in the art.” *In re Fritch*, 23 U.S.P.Q. 1780 (Fed. Cir. 1992). In this regard, “a prior art reference may be considered to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *Monarch Knitting Machinery Corp. v. Fukuhara Industrial & Trading Company Ltd.*, 45 U.S.P.Q. 2d 1977 (Fed. Cir. 1998). “If the examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent.” *In re Oetiker*, 24 U.S.P.Q. 2d 1443, 1444 (Fed. Cir. 1992).

2. The §103 Rejection of Claims 1-10 Should Be Reversed Because the Patent Office Has Failed to Establish a *Prima Facie* Case of Obviousness

Appellants respectfully submit that the Patent Office has failed to establish a *prima facie* case of obviousness with respect to the § 103 rejection of Claims 1-10. Specifically, a person of ordinary skill in the art would not be motivated to combine Rowe and Excel 5.0. Moreover, even

if Rowe and Excel 5.0 were combined, the combination does not teach or suggest all of the elements of the claims.

i. A Person of Ordinary Skill in the Art Would Not Be Motivated to Combine Rowe and Excel 5.0

The Patent Office states that *Rowe* teaches all of the elements of the claimed invention except for changing the hierarchical structure on the screen (i.e., showing more columns that are not originally displayed on the screen). Thus, the Patent Office relies on *Excel 5.0* to remedy the deficiencies of *Rowe*. Applicants respectfully submit that the combination of *Rowe* and *Excel 5.0* does not teach or suggest the elements of the claimed invention for the following reasons.

Rowe discloses a schedule display 50 including a category display 52, a subcategory display 54 and program display 56 (See Figs. 2 through 4). Each of these three displays include a number of tiles representing categories, subcategories and programs. The schedule display also includes a program summary panel 90 for communicating detailed information about a selected tile from the programs. Additionally, *Rowe* discloses a focus frame 60 that is provided for selecting tiles in the display elements.

The invention described in *Rowe* simplifies the programming information available to a user so that the user can easily see the information and select a category from the displayed information (Col. 2, lines 10-16). Specifically, *Rowe* displays a schedule for programming information "based primarily upon the classes of programs, rather than the time period for each program." (Col. 2, lines 17-23). *Rowe* specifically restricts the programming information displayed by the system to those programs matching characteristics selected by the viewer or user. Thus, the system enables the user to narrow the scope of the programming information supplied by the system to a more manageable number of choices.

Specifically as described above, *Rowe* discloses that the scheduled information is limited to three primary display elements: a category display 52, a subcategory display 54 and a program display 56 (Col. 2, lines 51-56; Figs. 2-4). A view panel 58 is positioned in a fixed location on a central portion of the schedule display 50. The user manipulates a focus frame 60 which moves horizontally along the viewing panel 58. The programming information is presented by each of the displays 52, 54 and 56 using tiles where each tile represents a specific item of programming information. The user moves the focus frame horizontally from one display to the next and selects one of the tiles in either the category display 52, the subcategory display 54 or the

program display 56. The user then can vertically scroll through each of the tiles in the selected category to find specific programming information (Col. 8, lines 7-21). *Rowe* does not disclose, teach or suggest providing programming information that includes more than three columns. In fact, *Rowe* teaches away from such a display because providing a display with more than three columns would add additional information on the display and thereby make the display more complex and less user friendly for a viewer to manipulate and find specific programming information.

The Patent Office therefore relies on *Excel 5.0* for disclosing means for manipulating the focus frame from the left to the right (i.e., horizontal scrolling) to view different columns in a spreadsheet. Appellants respectfully submit that there is no motivation or suggestion in the references to make such a combination.

As described above, *Rowe* does not disclose, teach or suggest providing multiple columns of program information to a user because doing such would unnecessarily complicate the program display. Moreover, *Rowe* discloses that a user can scroll focus frame 60 both horizontally and vertically. As stated in *Rowe*:

[a user can]. . . peruse a selected class of programming information by scrolling the tiles of one of the category, subcategory, or program displays. To control the display of one of the category, subcategory, or program tiles, the user can move a focus frame along the viewing panel to a location proximate to the selected corresponding display. (emphasis added)(Col. 3, lines 39-45).

Thus, *Rowe* discloses horizontally scrolling from one tile to the next on the display such as scrolling the focus frame 60 from a category tile 62 in category display 52 to a subcategory tile 64 in subcategory display 54 as shown in Figs. 2 and 3. *Rowe* also discloses that a viewer or user can scroll vertically on the display to view different tiles within a selected category. (Col. 8, lines 7-20).

Accordingly, a person of ordinary skill in the art would not be motivated to combine *Rowe* with *Excel 5.0* to teach or suggest the horizontal scrolling of the focus frame 60 in *Rowe* when *Rowe* already discloses that focus frame 60 can be scrolled or moved both horizontally and vertically along the program display.

ii. Even If *Rowe* and *Excel 5.0* Are Combined, the Combination Does Not Teach or Suggest All of the Elements of the Claims

The claimed invention is directed to an information processing apparatus, an information processing method and a recording medium which enables a user to more easily and efficiently search for information on an electronic music distribution system, a video on demand system, or similar systems for a desired content (Specification, page 1, lines 1 through 17). Specifically, the claims of the present invention are generally directed to a first display control device for controlling a display of a icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second hierarchical layer (which are at a level lower than the first hierarchical layer), a plurality for third icons on the third hierarchical layer (which are at a level lower than the second hierarchical layer) and a plurality of fourth icons on a fourth hierarchical layer (which are at a level higher than the first hierarchical layer). The different hierarchical layers exhibit an array of icons where the first icons are displayed as a column or row on a screen and the second icons as another column or row on the screen. The number of the first icons displayed on the screen and the number of the second icons displayed on the screen are determined by the size of the display area on the screen. As described above, the first and second icons are arranged on the screen to form an array hierarchical structure. The information processing method includes an icon specifying means such as a cursor for specifying a desired icon from the first and second icons displayed on the screen.

Additionally, the method includes a second display control device for changing the hierarchical structure displayed on the screen. This includes displaying the third icons to replace the second icons in the hierarchical structure on the screen and displaying the second icons to replace the first icons in the hierarchical structure on the screen when the icon specifying means or cursor specifies one of the second icons.

Moreover, the method includes displaying the fourth icons to replace the third icons in the hierarchical structure on the screen, displaying third icons to replace the second icons in the hierarchical structure on the screen and displaying the second icons to replace to the first icons in the hierarchical structure on the screen when the icon specifying device or cursor specifies one of the third icons in the hierarchical structure. Thus, the claimed invention moves and displays the different hierarchical layers to a user as the user indicates different icons associated with the hierarchical layers.

Even if *Rowe* were combined with *Excel 5.0*, the combination does not teach or suggest the elements of the claims of the present invention. As described above, *Rowe* does not disclose, teach or suggest that the program display 56 includes more than three columns or that *Rowe* provides columns of program information not included on the screen. In fact, providing such a display would complicate the programming information provided to the viewer and teach away from the invention of *Rowe*.

Additionally, *Excel 5.0* teaches that to move from a first cell in a spreadsheet to a second different cell, a user presses the arrow key indicating the direction of the second cell (Table 2.1, page 14). Therefore, the user presses the appropriate arrow keys until the second cell is activated or highlighted. If a desired cell is not displayed on the screen, the user presses the arrow keys (or alternatively uses the mouse) until the desired cell is highlighted. For example on page two of *Excel 5.0*, if cell A1 is highlighted as shown Fig. 1.1 and a user wants to move to cell B1, the user presses the right arrow key one time to highlight cell B2. Contrary to the claimed invention, the movement from cell A1 (i.e., the first hierarchical structure) to cell B1 (i.e., the second hierarchical structure) does not cause the columns A, B, C, D, etc. themselves to move or scroll to the left or right. In the claimed invention, however, when the icon-specifying means specifies one of the second icons in the hierarchical structure, the third icons replace the second icons and the second icons replace the first icons in the array hierarchical structure (see claims, 1, 9 and 10). Neither *Rowe* nor *Excel 5.0* teach or suggest these elements.

Therefore, the combination of *Rowe* and *Excel 5.0* does not disclose, teach or suggest all of the elements of the claimed invention. Specifically, the combination of *Rowe* and *Excel 5.0* does not disclose, teach or suggest the element of displaying the third icons to replace the second icons on the screen and displaying the second icons to replace the first icons in the array hierarchical structure on the screen when the icon-specifying means specifies one of the second icons in the array hierarchical structure nor the element of displaying a plurality of fourth icons which replace third icons in an array hierarchical structure on a screen, displaying third icons that replace the second icons in the array hierarchical structure on the screen and display second icons that replace first icons on the array hierarchical structure on the screen when the icon specifying means specifies one of the third icons in the hierarchical structure.

For at least these reasons, the combination of *Rowe* and *Excel 5.0* does not disclose, teach or suggest all of the elements of the independent claims 1, 9 and 10. Therefore, claims 1, 9 and

10, and claims 2 through 8 which depend from claim 1, are each patentably distinguished from the combination of *Rowe* and *Excel 5.0* and are in condition for allowance.

Accordingly, Appellants respectfully request that the rejection of Claims 1-10 under 35 U.S.C. § 103 be reversed.

IX. CONCLUSION

The claimed invention set forth in Claims 1-10 is neither taught nor suggested by the combination of the cited references. Thus, the Patent Office has failed to establish a *prima facie* case of obviousness with respect to the rejection of Claims 1-10. Accordingly, Appellants respectfully submit that the rejection of pending Claims 1-10 is erroneous in law and fact and should therefore be reversed by this Board.

Respectfully submitted,

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APPENDIX

1. An information-processing method comprising:

a first display control means for controlling a display of an icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second hierarchical layer at a level lower than said first hierarchical layer, a plurality of third icons on a third hierarchical layer at a level lower than said second hierarchical layer and a plurality of fourth icons on a fourth hierarchical layer at a level higher than said first hierarchical layer so as to exhibit an array of said first icons as a column or a row on a screen and an array of said second icons as another column or another row on said screen wherein:

the number of said first icons displayed on said screen and the number of said second icons displayed on said screen are determined by the size of a display area on said screen; and

said array of said first icons and said array of said second icons are displayed on said screen to form an array hierarchical structure;

icon-specifying means for specifying a desired icon from said first or second icons displayed in said array hierarchical structure; and

second display control means for changing said array hierarchical structure displayed on said screen so as to:

display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying means specifies one of said second icons in said array hierarchical structure; and

display said fourth icons to replace said third icons in said array hierarchical structure on said screen, display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying means specifies one of said third icons in said array hierarchical structure.

2. An information-processing apparatus according to claim 1 wherein said first to fourth icons each represents a content or a class of a content.

3. An information-processing apparatus according to claim 2, said apparatus further having reception means for receiving a content, a content class or information relevant to a content or relevant to a hierarchical layer of contents.

4. An information-processing apparatus according to claim 3, said apparatus further having third display control means for controlling said display so as to exhibit information relevant to an icon specified by said icon-specifying means or information relevant to a hierarchical layer to which said specified icon pertains.

5. An information-processing apparatus according to claim 1, said apparatus further having fourth display control means for controlling a display of a picture showing a route to one of said second icons.

6. An information-processing apparatus according to claim 1 wherein said first control means is capable of controlling said display so as to scroll said first and second icons when said displayed icons are updated.

7. An information-processing apparatus according to claim 1 wherein said icon specifying means is capable of specifying:

an icon on a hierarchical layer at a level lower than a hierarchical layer specified by a cursor in accordance with an operation of a predetermined key for a first direction;

an icon on a hierarchical layer at a level higher than a hierarchical layer specified by said cursor in accordance with an operation of a predetermined key for a second direction; and

an icon on the same hierarchical layer specified by a cursor in accordance with an operation of a predetermined key for a third or fourth direction.

8. An information-processing apparatus according to claim 1, said apparatus further having layer-count-acquiring means for acquiring the number of hierarchical layers to be displayed wherein said first control means is capable of controlling said display so as to exhibit icons pertaining to as many hierarchical layers as indicated by said number of hierarchical layers to be displayed, which is acquired by said layer-count-acquiring means.

9. An information-processing method comprises: a first display step of controlling a display of an icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second hierarchical layer at a level lower than said first hierarchical layer, a plurality of third icons on a third hierarchical layer at a level lower than said second hierarchical layer and a plurality of fourth icons on a fourth hierarchical layer at a level higher than said first hierarchical layer so as to exhibit an array of said first icons as a column or a row on a screen and an array of said second icons as another column or another row on said screen wherein:

the number of said first icons displayed on said screen and the number of said second icons displayed on said screen are determined by the size of a display area on said screen; and

said array of said first icons and said array of said second icons are displayed on said screen to form an array hierarchical structure;

an icon-specifying step of specifying a desired icon from said first or second icons displayed in said array hierarchical structure; and

a second display control step of changing said array hierarchical structure displayed on said screen so as to:

display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying step specifies one of said second icons in said array hierarchical structure; and

display said fourth icons to replace said third ~~first~~ icons in said array hierarchical structure on said screen, display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying step specifies one of said third icons in said array hierarchical structure.

10. A recording medium for storing a program to be executed by a computer to implement an information-processing method, which comprises:

a first display control step of controlling a display of an icon hierarchy including a plurality of first icons on a first hierarchical layer, a plurality of second icons on a second hierarchical layer at a level lower than said first hierarchical layer, a plurality of third icons on a third hierarchical layer at a level lower than said second hierarchical layer and a plurality of fourth icons on a fourth hierarchical layer at a level higher than said first hierarchical layer so as to exhibit an array of said first icons as a column or a row on a screen and an array of said second icons as another column or another row on said screen wherein:

the number of said first icons displayed on said screen and the number of said second icons displayed on said screen are determined by the size of a display area on said screen; and

said array of said first icons and said array of said second icons are displayed on said screen to form an array hierarchical structure;

an icon-specifying step of specifying a desired icon from said first or second icons displayed in said array hierarchical structure; and

a second display control step of changing said array hierarchical structure displayed on said screen so as to:

display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying step specifies one of said second icons in said array hierarchical structure; and

display said fourth icons to replace said third icons in said array hierarchical structure on said screen, display said third icons to replace said second icons in said array hierarchical structure on said screen and display said second icons to replace said first icons in said array hierarchical structure on said screen when said icon-specifying step specifies one of said third icons in said array hierarchical structure.